PALAMURU UNIVERSITY - MAHABUBNAGAR

Under Graduate Courses (Under CBCS 2020–2021 onwards)

B.Sc. SERICULTURE II YEAR

SEMESTER – IV

PAPER – IV: POST COCOON TECHNOLOGY

Theory: 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)
Practical: 3 Hours/Week Credits: 1 Marks: 25

Objectives

1. To introduce the cocoon and its significance in reeling.
2. To acquaint with silk reeling technologies and its importance.
3. To understand the process from cocoon to yarn.

UNIT – I

Textile fibers – Brief introduction to natural & synthetic fibers and their uses: cocoon characteristic, structure of fiber; physical and commercial characteristic of cocoons, importance and problems of reeling in industry.
Cocoon sorting – objectives & procedure: defective cocoons, marketing of cocoons – functions & procedure.

UNIT – II

Cocoon handling, Selection, preservation of cocoons,
Cocoon stifling:- objectives, factors and methods – sun drying, steam stifling, hot air drying, Yamato hot air driers – advantages and disadvantages, cocoon sorting, preservation of cocoons.
Cocoon cooking:- objectives, factors and methods – open pan, three pan, pressurized, floating and sunken system- merits and demerits.
Brushing:- objectives – method – advantage and limitations.

UNIT – III

Silk Reeling:- Evolution of silk reeling, reeling units – charaka, cottage basin, multiend, semi automatic and automatic reeling devices – components and their functions.
Re reeling and packing: objectives, grant reeling, hank preparation, lacing, skeinning, booking, baling and bundling.
Raw silk properties – physical, chemical and microscopic - factors influencing the properties/ silk quality of raw silk, silk exchange – structure and functions.

UNIT –IV

Raw silk testing and grading:- objectives of testing/grading,

Raw silk testing: Visual, winding, evenness, cleanness, neatness, tenacity and elongation, cohesion and condition weight:- raw silk grading – international standards and bureau of International standards (BIS).

Doubling, twisting, weaving, degumming, bleaching and silk dyeing – objectives and methods.

REFERENCE BOOKS:-

1. Bibhuti Nath Jha (2012) Silk industry in India, Satyam Publishing house, New Delhi.
2. Dhote, A.K (1989): Sericulture instructional cum practical manual, Volume V, Silk reeling, testing and spinning, NCERT, New Delhi.
3. Huang guo Rui (1998) Silk Reeling, - Oxford & IBM Publishing Co. Pvt Ltd, New Delhi.
4. Krishnaswami, S. Madhava Rao, N.R, Suryanarayana, S.K and Sundaramurthy, TS (1972) Manual – 3 Silk reeling. FAO Agricultural Service Bulletin 15/3 Food & Agriculture Organization of the United Nations, Rome
5. Mahadevappa, D., Halliyal, U.G., Shankar., A.G and Ravindra Bhandiwad 2000. Mulberry silk reeling technology, Oxford & IBM publishing Co. Pvt Ltd, New Delhi.
6. Somasekhar, T.H and Kawakami, K Eds (2002) manual on Bivoltine silk reeling technology, 2002, JICN PP BST Project CSRTI Mysore.

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B.SC. SERICULTURE II YEAR

SEMESTER – IV

PAPER – IV: POST COCOON TECHNOLOGY PRACTICALS

Practical: 3 Hours/Week Credits: 1 Marks: 25

(Core paper)

1. Identification of textile fibers by microscopic, physical, chemical and confirmatory tests.
2. Physical and commercial characters of cocoons in MV and BV races / Breeds.
3. Properties like tenacity, elongation, toughness, elastic recovery and moisture absorption.
4. Sorting of cocoons:- Identification and calculation of good and defective cocoons by number and percentage.
5. Cocoon stifling and cooking
6. Determination of filament length / reel ability/raw % recovery / renditta and denier.
7. Determination of alkalinity and hardness of reeling water by titration method.
8. Identification of reeling machines and their components.
9. Estimation of degumming loss in multivoltine and bivoltine cocoons and raw silk.
10. Estimation of bleaching loss in multivoltine silk.
11. Dyeing of multivoltine and bivoltine silk using acid, basic and compound dyes.
12. Printing of silk fabrics: objective and methods – hand and screen printing.
13. Study of different types of silk waste
14. Visit to nearest silk reeling centers.
15. Longitudinal & cross section view of silk textile fibers & its impact on physio-mechanical characters.